

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

- 1-10. (Canceled)
11. (Withdrawn) A method using the composition of claim 1 for fabricating phase-change-material microcapsule dispersing in a water phase, comprising:
- putting the composition in a reactor, wherein the composition comprising:
 - the waterborne polyurethane aqueous solution;
 - the phase-change-material;
 - the lipophilic monomer; and
 - the solid wax;
 - emulsify the composition by stirring;
 - performing at least two stages heating process to elevate a temperature of the emulsified composition; and
 - adding at least one stabilizer.
12. (Withdrawn) The method of claim 11, wherein a speed of the emulsify by stirring is between about 4000 rpm and 9000 rpm.
13. (Withdrawn) The method of claim 11, wherein a time for the emulsion by stirring is between about 2 minutes and 5 minutes.
14. (Withdrawn) The method of claim 11, wherein the temperature range is between is about 20 degree Celsius and 90 degree Celsius.

15. (Withdrawn) The method of claim 11, wherein the elevating temperature further comprising:

keeping a constant temperature at each stage, wherein the duration is 20 from 1 hour to 5 hours at the stage.

16. (Withdrawn) The method of claim 1 wherein the waterborne polyurethane in the waterborne polyurethane aqueous solution is selected from a group consisting of waterborne polyurethane, 2,2 (hydroxymethyl) propionic acid and its triethylamine salt, diamine containing sulfonate salt and a combination thereof.

17. (Withdrawn) The method of claim 11, wherein the stabilizer is sorbitan monooleate or sodium dodecyl sulfonate.

18. (Withdrawn) The method of claim 11, wherein the phase-change-material is an organic compound with polarity.

19. (Withdrawn) The method of claim 11, wherein the phase-change-material is a carboxylic ester.

20. (Withdrawn) The method of claim 19, wherein a carboxylate of the carboxylic ester is selected from a group consisting of formate, acetate and propionate.

21. (Withdrawn) The method of claim 19, wherein carbon atom number of an alkoxyl of the carboxylic ester is between 10 and 18.

22-25. (Canceled)

26. (New) A composition for fabricating phase-change material microcapsules, comprising:

a waterborne polyurethane aqueous solution, wherein the weight ratio of the waterborne polyurethane over the composition is 0.05 – 0.40;

a phase-change material having a polar functional group and a lipophilic moiety;

a lipophilic monomer dissolved in the phase-change material, wherein the weight ratio of the lipophilic monomer over the phase-change material and the waterborne polyurethane is 0.03 – 0.12 and 0.25 – 0.5, respectively, and the lipophilic monomer is isocyanurate of 1,6-hexamethylene diisocyanate, which can react with the waterborne polyurethane to form shells of the microcapsules; and

a solid wax.

27. (New) The composition of claim 26, wherein the phase-change material is a carboxylic ester.

28. (New) The composition of claim 27, wherein a carboxylate of the carboxylic ester is selected from a group consisting of formate, acetate and propionate.

29. (New) The composition of claim 27, wherein a carbon atom number of an alkoxyl group of the carboxylic ester is between 10 and 18.

30. (New) The composition of claim 26, wherein the weight ratio of the waterborne polyurethane over the composition is 0.10 – 0.30.

31. (New) The composition of claim 26, wherein the weight ratio of the lipophilic monomer over the phase-change material is 0.05 – 0.10.

32. (New) The composition of claim 26, wherein the weight ratio of the lipophilic monomer over the waterborne polyurethane is 0.3 – 0.45.

33. (New) The composition of claim 26, wherein a monomer of the waterborne polyurethane comprises 2,2-bis (hydroxymethyl) propionic acid.

34. (New) The composition of claim 26, wherein a chain extender used to prepare the waterborne polyurethane comprises diamine containing a sulfonate functional group.